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ABSTRACT

The smoking behavior and attitudes of public school teachers were studied to determine if the teachers' smoking behavior is related to their attitudes and behavior regarding students' smoking practice and smoking education in schools. The school system studied was in Northampton, Massachusetts, where 162 of the 194 teachers randomly selected from various schools in the district completed the close-ended questionnaires, administered and collected by the researcher. The study yielded a return rate of 83 percent. The results of the study showed that the general climate in school favored the establishment of a comprehensive smoking education program. It also indicated that the teachers' attitudes and behaviors towards smoking education were closely related to their smoking behavior. The exsmokers were the most active group in attempting to initiate change in student smoking behavior, while the smokers were the least active in this respect. Furthermore, preservice and inservice teacher training programs in relation to smoking education were shown to have been extremely sparse and ineffective in the past. Teachers felt that they were ill equipped to deal with student smoking behavior and suggested that a health education specialist deal with this important health education issue at the classroom level. (Authors/JA)

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THE EFFECT OF THE TEACHERS' SMOKING BEHAVIOR ON THEIR INVOLVEMENT IN SMOKING EDUCATION IN THE SCHOOLS

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The health hazard of cigarette smoking is a relatively well documented phenomenon, and various measures have been taken in the interest of reducing cigarette smoking (1). Primary efforts rendered include the banning of television advertisements, the development of smoking cessation programs, mandatory warnings to all cigarette smoking passengers on commercial airplanes and the initiation of smoking education programs in the public schools. The proportion of cigarette smokers among the adult population has shown a decrease since the institution of these efforts, yet no such descrease has been evidenced in the proportion of children who smoke (2).

Among the major factors involved in the unsuccessful attempts to reduce smoking in children are possibly that the focus of previous smoking education campaigns were not attractive to the youth, and, secondly, that the educators have not made a successful effort to meet the need for a smoking education program in the schools. Considering the fact that very few teachers have received any specific health education training as part of teacher preparation, it may be reasonable to assume that a key factor in the schools' ineffectiveness in smoking education is due to the teachers' lack of understanding and skill in handling tasks relative to this important school health issue. Confusion on the role they can play to effect students' smoking behavior and a feeling of conflict harbored by some teachers about helping students because of their own smoking habits may have further retarded the effort.

The teacher as a change agent can help students in various ways to develop desirable health knowledge, attitudes and behavior. To a great degree the teacher is an opinion leader in a school setting capable of influencing pupil behavior in a way like physicians and nurses influence patients in health settings (3-5). A teacher's appreciation on smoking education can help the

school to set policy, implement educational programs and set a general climate in the school that will be conducive to smoking education. Indirectly, a teacher's attitudes and practices on smoking could set an exemplary role for students to refer to. It is clear that a critical strategy in the planning of smoking education in school is first to gain a thorough understanding on the attitudes and behavior that teachers have on cigarette smoking and then design programs accordingly to attract their support.

Numerous studies have been conducted to date to investigate the smoking behavior and attitudes of physicians (6-8), nurses (9,10), coaches (11), and the general population (12,13). School teachers, however, have not been studied in this respect to any degree of proficiency. A research gap exists in the area of smoking behavior study, particularly in regard to the single group of professionals who, perhaps, have the greatest potential of all to influence the behavior of today's youth.

This study was thus designed to investigate the behavior and attitudes of school teachers on smoking and smoking education programs. An attempt was also made to determine whether or not the teacher's smoking status has a direct relationship to his/her attitude toward student smoking and smoking education.

METHODOLOGY

For the purpose of selecting a school system as representative as possible of a somewhat typical Massachusetts school system, several systems were analyzed in terms of the following variables: geographic location; public school characteristics: population size and density; economic and employment conditions and the educational level of the population. As a result the

Northampton School District was selected.

Northampton is a town of medium size and is neither entirely urban or rural. The majority of the town population has completed four years of high school or more and has an income quite comparable to the medium income level for the state. There are eleven elementary schools, two junior high schools and one high school in town. By utilizing the method of random selection, five elementary, two junior high and one high school were selected to participate in the study.

Upon selection of the Northampton public school system for this study, permission to enter the school was obtained from the Superintendent's office. Subsequently, meetings with the principals of the schools selected were arranged for the purpose of discussing and establishing an effective data collection technique suitable for the particular schools to be involved.

At the elementary schools, the study was explained to the school principals, who, in turn, distributed and collected the questionnaires; at the junior high schools faculty meetings were held, at which time the questionnaires were distributed and collected by the researcher; and at the high school a meeting was held, at which time the study was explained to all department heads, who, in turn, distributed the questionnaires to their own faculty. Throughout the data collection process, confidentiality and anonymity were s stressed, and the cooperation of the teachers was on a voluntary basis.

In all, there were 194 teachers in the study sample, and by means of the above-outlined methodology, 162 of the questionnaires were completed and returned, resulting in a return rate of eighty-three percent.

RESULTS

Packground

Of the 162 teachers who completed and returned their questionnaires, current smokers account for 26.5% while 27.3% are ex-smokers and 45.6% have never smoked. The average daily cigarette consumption of smokers is slightly less than one pack per day and the number of years the person has been smoking ranged from under one to over twenty-five years with a mean of approximately thirteen years. The mean length of time the ex-smoker hasn't smoked is slightly over seven years (the range was from two months to 325 months).

Eighty-seven teachers (38.3%) who represent 71.3% of the smokers and ex-smokers groups indicated that they have made at least one attempt to change their smoking pattern over the past few years. Greater than half of them indicated that they have either stopped smoking cigarettes or stopped and started periodically while the others have modified their behavior to varying degrees such as cutting down the number smoked, not smoking cigarettes to the end, switching from a non-filter tip and/or using a filter holder and switching to either a pipe or cigars.

Smoking Education Climate in School

In an attempt to investigate the teachers' knowledge and/or acceptance of a relationship between cigarette smoking and several select medical conditions, they were asked to indicate whether they felt that an association exists, does not exist, or that they do not know, between smoking and the medical conditions presented in Table 1. A statistically significant difference exists in the response of the smoking teachers as opposed to those who are not current smokers. In all cases, a smaller proportion of smokers than non-smokers stated that they feel an association exists and in turn answered the question as "don't know."

TABLE 1. Teachers' Feelings Toward the Existence of An Association Between Cigarette Smoking and Several Medical Conditions

Medical Condition	SMOKERS Assoc. Exists	SMOKERS Assoc. Doesn't Exist	SMOKERS Don't Know	Level of Signific.	NON-SMOKERS Assoc. Exists	NON-SMOKERS Assoc. Doesn't Exist	NON-SMOKERS Don't Know
Emphysema & Bronchitis	88.4	0	11.6	x=2.325 n.s.	93.9	0.9	5.2
Lung Cancer	85.4	0	14.6	x=7,757 p<.01	98.9	0	1.8
Cardio-Vas-Cular Disease	64.3	0	35.7	x=7.066 p<.01	85.2	0	14.8
Oral Cancer	56.1	7.3	36.6	x=12.78 p<.01	78.4	0	21.6
Asthma	43.9	9.8	46.3	x=9.879 p<.ol	67.9	1.8	30.4
Cervical Cancer	4.8	16.7	78.6	x=o.384 n.s.	7.5	17.0	75.5

*Smokers: N=43; Non-Smokers: N=119 (includes all ex-smokers and non-smokers).

With a purpose to further measure the general climate existing in the schools in relation to smoking education, a series of questions was asked. The percent of teachers who agreed to these attitude statements by smoking status is presented in Table 2. This table shows the following relationships.

1. While the vast majority of the study sample agrees that cigarette smoking is not a minor health problem, the teachers who are ex-smokers agree with this statement most strongly while the non-smokers are also in strong agreement.
2. While a majority of ex-smokers and non-smokers feels that it is their responsibility to set a good example for the development

of sound health behavior by the students, less than half of the smokers agree with this statement.

3. While about half of the ex-smokers and non-smokers feel that cigarette smoking is an important issue worthy of considerable time expenditure on the teacher's part, more than two thirds of the smokers disagree.
4. When teachers were asked to refute the importance of the issue of smoking education, once again, a smaller proportion of smokers than their non-smoking colleagues consider smoking education to be a high priority subject.
5. The last two statements in Table 2 were phrased to further investigate the teachers' perceived degree of responsibility for the students' smoking behavior. Though attitudinal differences were not great among the smokers, non-smokers and ex-smokers, data showed that fewer smokers than the other categories feel that it is the teachers' responsibility to convince and help their students to stop smoking.

Finally, in regard to the general population, the teachers were presented with a list of various formal actions to curb cigarette smoking and asked to indicate which ones they were in favor of. The banning of all cigarette advertising as has been done on television was selected as the most favorable (59.3%) while the establishment of smoking withdrawal clinics, the prohibition of smoking on all school premises, enforcement of the age limit for buying cigarettes and the prohibition of smoking in all public places were also selected as favorable measures by greater than forty-five percent of the study sample.

TABLE 2. Percent of Teachers Who Agreed to Attitude Statements by Smoking Status

ATTITUDES STATEMENT	SMOKERS %	NON-SMOKERS %	EX-SMOKERS %
The problem of cigarette smoking and health is not a minor one.	63.4	93.2	97.8
It is the teacher's responsibility to set a good example for the student by not smoking	41.5	74.3	81.4
Teachers should be more active than they have been in speaking before student groups about cigarette smoking	29.0	41.4	53.9
The teacher's time can be better spent doing other things than trying to reduce student smoking	60.0	42.0	38.5
It is the teacher's responsibility to help their students stop smoking	42.8	51.4	61.9
It is the teacher's responsibility to try to convince the student to stop smoking	45.2	61.1	58.5

Involvement in Classroom Smoking Education

The next set of questions was designed as a device to investigate the teachers' use of various approaches in dealing with classroom smoking education. The data obtained indicates that very few teachers (4.8%) avoid discussing the subject yet, on the other hand, very few (1.4%) offer to assist student smokers to stop smoking. The majority of teachers (63.0%) discuss the subject only

if the students bring it up. The responses of the teachers according to their smoking status was essentially the same except for the category that calls for teacher originated discussion. The group of teachers who are ex-smokers are the most active in this respect while the non-smokers are somewhat active and the smokers are essentially inactive. See Table 3.

TABLE 3. Approach Used by Respondents in Dealing with Student Smoking Behavior.*

APPROACH USED	PERCENT OF RESPONDENTS USING			
	Smokers	Non-Smokers	Ex-Smokers	Combined
I Avoid Discussing the Subject	7.5	6.1	0	4.8
I Discuss the Subject Only If Students Bring It Up	80.0	59.1	52.5	63.0
Besides the Time a Student Brings Up the Subject, I Originate It If I Think Smoking Is Bad For Him	5.0	27.3	40.0	24.6
I Not Only Discuss the Subject, But I Will Also Offer to Assist Any Student Who Wants to Stop Smoking	0	1.5	2.5	1.4
I Make It A Point to Discuss the Subject with All of My Students and Offer All Assistance Possible	7.5	6.1	5.0	6.2

*Excludes respondents who indicate that they do not come in direct contact with students and respondents who did not complete this question.

The next set of survey items was designed to investigate the teachers' degree of involvement in attempting to initiate student smoking behavior change. We found that of all the teachers, 50.0% try to help student initiate smoking behavior change while 30.9% do not (the remaining 19.1% did not answer the question). Further analysis revelaed that a teacher's smoking status is

directly related to his/her degree of involvement in this respect. The ex-smokers are the most active in attempting to change their students' smoking behavior while the non-smokers are considerably less active and the smokers are likewise the least active. The majority of inactive smokers stated that they did not make an attempt to help their students to change smoking behavior because their personal smoking behavior inhibits their involvement in this regard. When those active teachers were asked about the approach they used to induce student smoking behavior change the most often used approaches are to impress the students with the hazards and (for those who are not smokers) setting an example by not smoking. See Table 4.

TABLE 4. Teachers' Approach Used to Initiate Student Smoking Behavior Change

Approach	Percent of Response
Give a direct order	1.3
Impress them with the hazard	42.4
Setting an example by not smoking	36.2
Providing or suggesting educational materials	10.0
Referring them to the appropriate resources	8.1
Other	1.9

Teacher Training in the Past

In an effort to establish the degree of impact of any previous teacher training, the teachers were presented with a list of information sources and asked to indicate from which one(s) they have received their knowledge in regard to the health hazards of cigarette smoking. As is evident from Table 5, very little information has been obtained through pre-service and in-service training whereas, on the other hand, nearly all of the teachers selected pro-

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fessional reports, mass media and health experiences of self, family and friends.

TABLE 5. Teachers' Sources of Information Related to the Health Hazard of Cigarette Smoking.*

Source of Information	Teachers' Selection	
	Number	Percentage
Mass Media	134	82.7
Professional Reports or Research	124	76.5
Personal (health experience of self, family, friends)	95	58.6
Pre-Service Training	12	7.4
In-Service Training	5	3.1
Other	9	5.6

*The teachers could select as many categories as applied.

The final set of questions was phrased to ask teachers to evaluate the potential effectiveness of several smoking education techniques. The teachers indicated that they see the displaying of cancerous lung specimens, film and slide showings and guest speakers as effective measures while the teachers' lectures and discussions, the displaying of posters and pamphlet distribution are virtually ineffective. See Table 6.

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TABLE 6. Teachers' Evaluation of the Potential Effectiveness of Various Smoking Education Techniques*

Weighted Value**	Techniques	Number of Responses: Very Effective	Somewhat Effective	Don't Know	Not Effective
411	Displaying specimen of cancerous lung	108	41	2	5
352	Showing films and slides	68	75	3	8
257	Guest speakers' lectures and discussions	27	81	28	27
239	Individual counseling by teachers	20	76	29	27
214	Displaying posters	14	77	34	18
219	Distributing pamphlets	9	91	38	10
199	Teachers' lectures and discussions	10	74	45	21

*Excludes those who did not respond to this set of questions.
**Weighted value indicates the overall evaluation (not effective=0 points, don't know=1 point, somewhat effective=2 points, and very effective=3 points).

DISCUSSION

From the foregoing results of this study, several interesting and valuable conclusions may be drawn from various trends displayed by the respondents. The major findings of this study may be classified into the following categories: (1) the general climate of the schools in regard to smoking education, (2) strategies of program implementation at the classroom level, and (3) the need for a teahcer training program of smoking education. The following discussion has been developed around these three major themes which are presented independently, yet it will become evident to the reader that there are common threads running throughout the discussion which relate all the major findings.

General Climate

The data obtained shows that, in general, the teachers feel that cigarette smoking presents a health hazard of considerable importance. In addition, we see that the majority of teachers feel that an association exists between smoking and cardio-vascular disease, lung cancer and emphysema. On the basis of this knowledge, the teachers feel that it is their responsibility to set a good example for the students by not smoking. Likewise, a large proportion of the teachers feel that the following formal actions should be adopted to curb the use of cigarettes: cigarette smoking should be disallowed on all school premises; all cigarette advertisements should be banned; withdrawal clinics should be developed to help those who want to change their smoking behavior; the age limit for buying cigarettes should be enforced; and smoking in any public place should be prohibited.

Obviously, the teachers are aware of the magnitude of the problem connected with smoking and as a result have made considerable efforts to alter their smoking behavior as well as that of their students. Greater than two-thirds of the smokers in the study sample have made an attempt to alter their smoking behavior over the past few years.

The results clearly suggest that the general climate in the schools is one in favor of the establishment of a comprehensive smoking education program: a program that would not only distribute information on smoking and health, but one that would also help smokers to stop smoking and to train teachers in regard to methods for helping student smokers change their smoking behavior. Considering that the teacher is in a key position in regard to influencing student behavior change and that the general climate in the schools seems to be favorable, the institution of such a program should receive full support and attention of the entire educational community.

Program Strategies

At the outset of the planning for any program, it is essential that the potential supporters and resistors be identified (14) in order to prevent any nullification of positive results attained. In the particular case of the school teachers' potential influence over student behavior, it may be beneficial to investigate the teachers' behavior and attitudes as a prelude to the planning of any program that aims to change student behavior.

The data shows that the smoking status of the teachers is closely related to their attitudes and practices in regard to classroom smoking education. In particular, few smokers than non-smokers and ex-smokers feel that there is a severe health hazard related to smoking. Likewise, fewer smokers feel that it is their responsibility to set a good example for the students by not smoking, and fewer smokers feel that smoking education is a subject worthy of a considerable amount of classroom time. In regard to classroom practice fewer smokers originate a discussion of smoking with their students and fewer smokers have made any attempts to initiate student smoking behavior change. When asked why they don't try to change student smoking behavior, the majority of the smokers responded that they can't because they themselves smoke.

On the other hand, the attitudes and behavior in the past of the non-smokers and ex-smokers seem to be much more favorable to the establishment of a smoking education program. Moreover, those teachers who are ex-smokers seem to be the ones who are most likely to be the strongest supporters of any smoking education in the schools, whereas the smokers may represent the potential resistors.

The study results indicate that at the outset of a smoking education program, an in-house coordinator should be sought out and a committee of strong supporters should be formed. The coordinator should preferably be an ex-

smoker with a health education background who is knowledgeable in regard to the effects of cigarette smoking and the most effective methods of smoking cessation and education available.

If instituted, the smoking education program should serve a manifold purpose in that its services will extend to students as well as teachers. In addition to disseminating information in regard to smoking and health, the program should aim to assist all those teachers who want to stop smoking so as to make the school atmosphere more conducive to smoking education for the sutdents.

Teacher Training

From the data obtained, it is evident that very little of the teachers' knowledge about the health hazards of cigarette smoking has been gained through pre-service and in-service training in the past. The need for the institution of teacher training programs is amply supported by the fact that very few teachers offer to assist the student to stop smoking. It appears that the teacher sees himself in a somewhat helpless position in this respect. Likewise, the single technique used most often by teachers who attempt to initiate student smoking behavior change is to try to impress the student with the health hazards involved. The teachers also expressed the feeling that their lecture and discussions are very ineffective smoking education techniques, while lectures given by guest speakers are considered much more effective. In addition, very few teachers provide or suggest educational materials to help the student stop smoking, nor do they make use of any existing community resources which may be of value in helping the student to stop smoking. It becomes obvious that the teacher does not consider himself as a very well-qualified person to deal with smoking education.

On the basis of these results, it appears that the primary purposes of establishing such a program of pre-service teacher training should be to bring all prospective teachers up to date on the scientific findings in respect to cigarette smoking, as well as to make smoking cessation measures available to all those who want to stop smoking. In addition, the program will familiarize the teachers with the most recent and most effective smoking education techniques available (15). A pre-service teacher training program should be made available to all prospective teachers while in college, especially to those who wish to teach in elementary school.

If the school teachers are to be expected to help students stop smoking (or prevent them from starting) it is essential that a comprehensive smoking education and, if desired, smoking withdrawal program be established as pre-service and in-service teacher training. Such measures could give the teachers more confidence in dealing with this issue as well as to broaden their awareness and knowledge levels in relation to the hazards of smoking and the benefits of quitting.

SUMMARY

The smoking behavior and attitudes of public school teachers were studied in an attempt to determine if the teachers' smoking behavior is related to their attitudes and behavior in regard to students smoking practice and smoking education in schools. The school system studied was Northampton, Massachusetts, where 162 of the 194 teachers randomly selected from various schools in the district completed the close-ended questionnaires administered and collected by the researcher. The study yielded a return rate of 83 percent.

The results of the study showed that the general climate in school is one in favor of the establishment of a comprehensive smoking education program.

It also indicated that the teachers' attitudes and behavior towards smoking education were closely related to their smoking behavior. The ex-smokers were the most active group in regard to attempting to initiate student smoking behavior change, while the smoking teachers were the least active in this respect. Furthermore, pre-service and in-service teacher training program in relation to smoking education showed to be extremely sparse and ineffective in the past. Teachers felt that they were ill-equipped to deal with student smoking behavior and suggested that this important health education issue should be dealt with by a health education specialist at the classroom level. This study indicated a need to strengthen pre-service and in-service teacher training programs of smoking education and to make smoking cessation programs available to those teachers who want to stop smoking.

All inquiries regarding the design or results of this study should be made in writing to Dr. T. L. Chen, Division of Public Health, School of Health Sciences, Draper Hall, University of Massachusetts, Amherst, Massachusetts, 01002.

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